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Editors Desk

by Ron Kovacs

Things are moving on on GENie. Since we have debuted on GENie in the ST Roundtable Bulletin Board, things have been slow but productive. If you are a GENie user, Please pay us a visit in CAT #22 and browse the Topics.

In the weeks ahead look for some PD reviews and Shareware titles. We are working on other projects too. If you have a suggestion, Leave them on GENie or call the BBS. We want to continue being the best source for weekly Atari News.

The ST-Report Network of Systems has been completed. We are now at a point to start selecting Regional systems to carry and support the magazine. If you are interested in applying for network status, Please call the BBS for more information.

This weeks ZMagazine is devoted entirely to the Beta Release of BBS Express! Professional. Check it out for some interesting information on the BBS system. There are features not included in the ST version!

The ST Transformer looks close to another updated release. Just waiting for the CIS SIG sysops to allow Darek some room for the upload. GENie users are already downloading it. Look for an expanded review on the release in a future edition of ST-Report!

Free advertising to any Atari sanctioned User Group. This special offer starts April 1, 1988 and will continue through September 1988. Call for details. There are special requirements for advertising.

Thanks for reading.

ANTIC ONLINE REPORTS

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ATARI EARNINGS UP FOR 1987

By Carolyn Cushman, Antic Editorial Assistant

March 3, 1988

Atari's earnings for 1987 were reported March 3, 1988 by the Reuter news service. Although fourth quarter earnings were down over the previous quarter, overall earnings were up significantly over last year (with a net operating income of 44.2 million, as opposed to 1986 figures of 25.1 million). Sales revenues for the quarter were up significantly, \$276.96 million from 92.67 million, due mostly to Atari's acquisition of the Federated Group on October 4, 1987.

However, net figures were down from the previous quarter, at \$18.70 million or 32 cents per share, down from \$23 million or 43 cents. The decreased net was again due to losses from Federated, which is expected to continue showing losses through the third quarter of 1988.

However, according to McGraw-Hill News, Atari Corp expects the electronics chain's performance to improve, and predicts that Federated (as separate from Atari) will break even for the year.

Considered apart from Federated, Atari Corp's computer sales grew at a record pace, according to the company, with computer sales representing 51% of total Atari sales. Other contributing factors included strengthened computer sales in Europe and "booming videogame sales in the United States," said Greg Pratt, company spokesman, "Videogames were a hot category this year. There were no teddy bears or laser guns to take those dollars away."

Atari's purchase of Federated Group Inc. has been seen as a smart marketing move, considering Atari's distribution problems in the U.S. With the acquisition of Federated, Atari gained 65 retail consumer electronics stores in California, Arizona, Texas and Kansas.

Atari moved quickly to get their products into the stores, providing at least some Atari users with a source for new Atari products.

NOTE FOR MARKET WATCHERS:

The Federated Group, bought by Atari in October, is no longer being traded under that name, but is included in the Atari (ATC) reports. The FEDERATED DEPARTMENT STORES (FDS) recently in the news is a different company which owns chains of department stores (including I. Magnin), grocery stores, and other retail outlets. As of March 2, FDS has agreed to combine with Macy's, putting an end to the attempted buyouts that have kept FDS in the news recently.

Atari Corp plans to demonstrate a new compact disk ROM player at the Third International Conference on CD-ROM in Seattle, taking place this week, according to McGRAW-HILL NEWS. The dual-purpose CD player stores up to 540 megabytes, plays standard music cd's (and includes a built-in headphone jack and remote control), and will work with available CD information disks such as the Grolier Encyclopedia or MicroSoft's Bookshelf, according to John Skrutch of Atari. It will connect to any Atari ST or Mega, and can be controlled by desk accessories (for setting up that program of your favorite music tracks, for example). The player can read three CD-ROM formats (the industry has yet to standardize) including High Sierra Group format. It also includes an IBM-PC interface card, so it can run on MS-DOS systems.

The player will be available to developers this month, and should be available to computer dealers and retail outlets in May 1988, at a suggested retail price of \$599.

The CD-ROM was introduced in Las Vegas at the November '87 Comdex. Here is an excerpt from ANTIC ONLINE's first Comdex report, describing the CD-ROM player in its early stages:

"The exciting CD-ROM player introduced at Comdex can read up to 540 megabytes of data or play music. It connects to Atari's ST and Mega computers through the DMA (direct memory access) channel, a communications port that transmits data at up to 10 million bits per second. At 540Mb, the player can store more data than 1,000 floppy disks or 200,000 printed pages.

"Demonstrated at the show is an English and French visual dictionary from Facts on File. It is categorized by topics such as transportation and food: click on the transportation theme and choose from an array of topics such as ferrys, container ships, airport terminals and so on --all items illustrated. Speech output identifies each image in French and English. Grolier's Encyclopedia also runs on this CD-ROM, as do audio CDs. Atari has a task force at work now developing more products for this player, which will be available at computer specialty dealers and retail outlets in February, 1988, at a suggested retail price of \$599."

ATARI SX212 MODEM

Atari Corp.
1196 Borregas Avenue
Sunnyvale, CA 94086
(408) 745-2000

For Atari 8-bit or ST \$99.95

Reviewed by Charles Jackson - Antic Technical and Online Editor

The SX212 (\$99.95) is Atari's first 300/1200 baud, Hayes-compatible direct-connect modem. It will work with your ST OR your Atari 8-bit computer -- without any additional interface devices. All in all, the SX212 is a safe, workable modem that offers Atari users an easy way to move up to 1200 baud online speed at the most affordable price on the market.

Best of all, the SX212 WORKS fine! During hours of online testing at ANTIC, we did not have any problems with the SX212 power supply, a weak point of the Atari 1030 modem. Nor did we find any bare wire-tips

dangling inside the case, as has been a worry to Atari XM301 modem owners (although it remains unclear if any equipment damage can be blamed on this threat).

The SX212 has a speaker, permitting you to hear busy signals, carrier tones and wrong numbers. If you've seen Atari's XEP80 eighty-column module (ANTIC, July 1987), you've already seen the SX212. Both were designed to use the same case. (This may explain why the silent XEP-80 has speaker brackets and a hole for a volume control. It also has recesses for eight modem status lights).

Your SX212 will also work with your ST. No special cables or adapters are necessary -- just use a standard modem cable and plug it into the ST's modem port.

On the ST, the SX212 can be used with any terminal program which supports a Hayes-compatible modem. Using the ST, we successfully tested the SX212 with Flash and several types of VT-52 emulators. Finally, we used the SX212 and FoReM-ST software (Commnet Systems) to create and control a BBS.

FINAL THOUGHTS

Atari's SX212 modem appears almost suspiciously competent. The \$99.95 SX212 uploads, downloads and runs a BBS as efficiently as ANTIC'S Hayes Smartmodem 1200 -- which sold for \$599!

But although the SX212 costs only a fraction of Hayes Smartmodem, it is a bit more difficult to live with. The SX212 speaker volume control is located deep within the modem. You need a long, thin screwdriver to adjust it.

The status lights, which let you know what the modem is up to, are dim and difficult to see. Your eyes must be perfectly level with the modem to see ANY of the status lights.

The SX212 only has one SIO port, so it must be placed at the far end of your chain of peripherals. Because of this limitation, you can't use the SX212 with any other single-port peripheral, such as a program recorder.

Documentation for the SX212 is adequate for a telecommunications novice, but there is very little for the serious programmer, and there is no documentation for the SX212's handler. The manual is a 51-page guide to installing the SX212 and using its command set.

Still, despite any imperfections, at only \$99.95 the SX212 is an unbeatable value for any Atari computer owner.

SPC Newswire

Compiled by Ron Kovacs

Hayes Microcomputer Products Inc. has developed a new 1200-bps modem specifically for use on Trintex's Prodigy videotex service when it rolls out in trial mode sometime this spring. The modem measures 2.75 x 3.5 x 1.75 inches and weighs less than 13 ounces. The auto-dial/auto-answer modem also is compatible with the latest versions of Hayes' own Smartcom I, II and III communications software.

Apple Computer has acquired Network Innovations Corp., the Cupertino,

Calif., developer of the CL/1 connectivity language.

Corvus Systems announced new communications software for networks running its PC/NOS operating system. The \$495 NosTalk Asynchronous Communications Service software makes it possible for modems located anywhere on the network to be accessed by any user, regardless of the location of the modem. The software supports the Hayes AT-compatible command set and modem speeds from 300 baud to 19.2 kilobaud.

One of the first library CD-ROM applications for the Macintosh has been developed by R.R. Bowker. The new product integrates the powerful search and storage capabilities with the Macintosh's user-friendly, graphics-oriented environment. Books in Print Plus, contains over 770,000 citations that can be accessed by any one of 17 categories, either alone or in combination, including the author, title, subject, keyword, publisher, language, price, publication date, edition and audience. Final versions of the two Macintosh-compatible CD-ROM disks are scheduled for publication in July 1988.

Telenet has established a new division called the "PC Services Group" designed to develop messaging services for the personal computer market. PSGS will come up with future versions of Telenet's PC Telemail software for IBMs and compatibles and a PC Telemail version for local area networks.

March 15, IBM and Microsoft will demonstrate new software for IBM's PS/2 line of personal computers at the Stouffer Concourse Hotel in Los Angeles. The type of software to be shown is unknown at the present time.

Garbage On The Line

[Ed.]

This week Linda continues her coverage of the FoReM FNET Mailer and her conversation with David Chiquelin. Stay tuned for more FoReM news in the weeks ahead. Thanks Linda for a job well done!!

FoReM Net Mailer Program by David Chiquelin

F-Net Interview by Linda Woodworth
Sector # Two

- - - - - (cut here) - - - - -

<Me> Getting back to the work on the Mailer...

DAVE - After completing the interpreter part (that reads the file on how to dial other BBSs) I started on the actual message transfers. At first it was to use Ymodem batch for sending messages, and I had the Ymodem batch receive routines that I had written for the Desk Accessory, I wrote, but did not have the send routines. I started to write them when it occurred to me that a lot of what was in the Ymodem routines would not be needed and would be wasteful in the data transfer, such as sending extra filler bytes for short messages. Since I was having to write a whole set of routines, I decided to 'simplify' (ha!) it by just writing my own 'protocol', hoping to maximize efficiency.

<Me> The changes FoReM SysOps watched you make to the mailer, was phenomenal, and as with the Beta 2.0 of FoReM, updates came out so fast it was hard to keep up with them. Ok, go on with the transfers...

DAVE - More things had to be worked out with Matt Singer, for the sending of the same message to duplicate nodes, for example sending a message to 5 boards, without actually sending the same message five different times. Also all the messages went to the same message base. I came up with the message base 'type' idea, which means that the SysOp of each BBS would classify his/her individual message bases, picking a match from a list of the different types I had seen, and that 'type' would be attached to all messages sent from that base. On the receiving end, the mailer checks the message type, and looks at another list the SysOp has created that tells it where to save all of the different types that come in. The user does nothing, and there was no change to the FoReM message structure.

<Me> So the message type is sent immediately before the body of the message. There were NO changes in the message structure of FoReM, but there were some changes to FoReM. The one doc file of yours stated, "Matt's gonna kill me for this!" You have gotten to know the FoReM BBS program well, I know you answered several questions for me. BIG question: Do you have a guess on how many hours you have spent with this GEM of yours?

DAVE - OK, I've been doing some research on the mailer (for prosterity, of course... hehehe) I have a doc file dated 7/27/87 for version 0.6, I just can't figure out when I started on the mailer. I wonder if Matt remembers better... Anyway, assume mid to late June for the start, and about 8 hours/day, 5 days a week (haha) for two months on the initial work, and then 4 hours a day 5 days a week until mid November. That would probably give a fair conservative estimate of the time spent. Some days I worked from 10AM until 1AM on it, and would do that for days on end. And then I would take a break for a day, and back... And when it was testing, I'd work from 11AM to 3 or 4AM, and then watch it run. I think that works out to about 580 hours. Then you could round it out with the time spent on it here <Texas> to 600 hours.

<Me> Wow, I do know one thing... everytime we called, you picked up the phone usually on the first ring. Yep, Dave's hard at work!! We had many updates to the mailer, any idea how many >>??

DAVE - How many versions? hahahahahahahah!!! What I have is 19 versions on my backup disks, but that is not all of them by a long shot. I didn't start keeping backup source codes until version .92B, dated 8/17/87. So knowing there was a 0.6 through 0.9 on to 0.91 0.92, 0.93, 0.93A dated the 18th of August, and I went into the 'type' - A, B etc. Type E Mailer would not connect with earlier versions! and also a Pascal 2.0 - 1.11 fmailer, and a debug version, which you remember no doubt!

<Me> Yes, I remember the debug version... boy do I remember that!!

DAVE - And then you have to remember the updates where the version number didn't change, just the date/time on the file! So how many versions? Hahahahah! You got me, take a guess...

<Me> Yeah, something .arcd at 8AM was _entirely different that one .arcd at 6 that evening. It became a race to keep up with FoReM _and_ the Mailer... It's called, "we're having some fun now..." And it truly was. I sat and watched the mailer run also... Didn't get much sleep back then, but I didn't care... I was entranced. You were out of direct touch with things for awhile, but are now back in the swing of things and have added some _very nice features to the Mailer. Some of it for our own protection, dealing with our passwords and PC Pursuit. While you were moving to the great state of Texas, some of us SysOp's <hopefully> became

a bit organized and tried to act like we knew what we were doing!! A campaign was begun to get the SysOps to send you the registration fee of a mere ten dollars. How is that coming >>??

DAVE - Well, at last count, about 60 had sent in their registration fee. And I really appreciate it.

<Me> We appreciate what _you do !! I find the F-Net totally fasinating and a challenge. One last question. Will the Mailer ever be done >>?? I know, I know... is a program EVER done >>??

Coming next... How the callers of FoReM/F-Netting Boards are using the Moose Mail... Thank you Dave... Thank you Matt. The work you put in is acknowledged!! Dave Chiquelin is at Node #3 and Matt Singer is at Node #1 <of course>.

Mini-Review GT100 Disk Drive

GTS-100 3 1/2" Disk Drive
Double-sided Double-density

Future Systems, Inc.
21634 Lassen Street
Chatsworth, CA 91311
Sugg. Retail: \$249.00

Now THIS is how you build a disk drive! An all-metal case surrounds the NEC-built drive mechanism in Future Systems's GTS-100 3 1/2" drive, and it's also QUIET-something that cant' be readily answered by some of the drives Atari has shipped in the past. If you were looking to buy an Atari SF314 it may be worth your time and money to look at this drive. If there are any sour grapes with the GTS-100 is that its index position readout isn't all that accurate (a nice trick, tho) and you may have to get the drive speed adjusted-the sure sign of this is some of your floppies won't read when inserted in the GTS-100 (this usually happens with mass-duplicated floppies: your originals may not read but your backups may.)

Depending on the price of this drive versus the Atari SF314 the GTS-100 may be a better buy. The GTS-100, does NOT like a 2 ms step rate and does NOT go beyond 80 tracks-so you are warned. Overall, it's a solid performer and deserves consideration.

***SYSOP'S NOTE: I think the person who wrote this review was a little confused and mixed up! His/her facts are WRONG! The Indus GT 100 will read to track 83 and the track window is not in step with some of the PD formatter programs but...it is very accurate, all one needs to do is try it's accuracy while editing a program.

Computer Shopper Joins GENie

=====

WELCOME -- Glad you could join our new Computer Shopper Roundtable on Genie!!! We're looking forward to hearing from you with suggestions, input, feedback, etc. Let's get the ball rolling...and stay tuned for more great news from Computer Shopper!

=====

1. Computer Shopper Bulletin Board
2. Computer Shopper Real-Time Conference
3. Computer Shopper Software Libraries
4. About the RoundTable
5. RoundTable News 880303

Enter #, <P>revious, or <H>elp?

HyPer Card Update

ST Owners:

After reading the impromptu conference with Sam Tramiel that appeared on Genie recently, we feel compelled to let you know of our plans for a "Hypercard-like" application. This program, currently called, "Omnocard" will enable the ST user to completely meld with his computer in a new and exciting way. The friendly interface puts the user to rest immediately via the familiar icons and mouse-clicking, none of which is implemented in programs such as "Zoomracks."

A completely integrated software package is also available from the new desktop, including a word-processor, paint program, database, telecommunications, mini-desktop (particularly of interest to the power user with a lot of folders), and an exceptionally easy to use program "Authoring Environment" akin to hypercard itself.

This Authoring Environment allows the novice to begin programming in the most effective way, without him even realizing it! A card metaphor is used throughout, to heighten the Stack (We call them decks) image. If you can organize a speech, you can write a program. Buttons, icons, graphics and text replace hundreds of lines of code, that to most look like Greek!

Based on many of the underlying concepts that are currently being explored in the realms of artificial intelligence, this program will be THE program for the Atari ST. Optimized on a Mega 2 or above, Omnicard will be available on all ST machines.

BeerysBit, A.S.C.,Inc; is currently marketing seven products specifically geared to support the ST Market. In addition, the Omnicard project is utilizing the talents of a PHD physicist, 2 CAD engineers, 2 professional programmers, and a professional artist, all with extensive experience on the Atari ST.

Thank you,
Andrew B.Beery
Steven T.Gray
Peter D.Beery
Kevin J.VanHook
Mario Perdue

Genie:Beerysbit
GEnie(2)K.VanHook
BeerysBit ASC,Inc;
8174 Century Circle East #8
Indianapolis, In 46260
(317)872-8622

Modification

by Dave Davey

This file explains how to connect an Atari ST or Mega ST to to a Princeton Graphic Systems Ultasync. This is a multisync monitor with a 12" screen, 0.28mm dot pitch, and 800*600 max resolution. Some of the features of the Ultasync are a tilt/swivel base, adjustments for vertical position, vertical size, horizontal position, and horizontal size, an underscan/overscan capability which allows full screen display in all resolutions, and three text modes for high resolution (green, amber, cyan). I have compared this monitor side-by-side with the NEC Multisync, and find it to give sharper text and at least as brilliant color display. I highly recommend this monitor to all ST users who want to be able to display all three resolutions on one monitor. The following connections detail how to rewire the Monitor Master from Practical Solutions to a DB9 pin (female) connector for use with the Ultasync.

Hardware	Approx. Prices
=====	=====
PGS Ultasync	\$485
Practical Solutions MONITOR MASTER	\$50
DB9 female connector	
Realistic SA-10 amplifier	\$30
Speaker (Radio Shack)	\$10

THE CONNECTIONS

COMPUTER	ULTRASYNC
=====	=====
	(DB9)
Pin 1 (audio)	Already connected to RCA jack in Monitor Master.
Pin 2	not connected
Pin 3	not connected
Pin 4 (monochrome detect)	already connected
Pin 5	not connected
Pin 6 (Green)	Pin 2
Pin 7 (Red)	Pin 1
Pin 8	not connected
Pin 9 (Horizontal Sync.)	Pin 4
Pin 10 (Blue)	Pin 3
Pin 11 (Monochrome signal)	Pins 1,2,3
Pin 12 (Vertical Sync.)	Pin 9
Pin 13 (Ground)	Pin 6

Rewire the Monitor Master so that when the button is in the OUT position, the mono detect is grounded, and the monochrome signal is switched with the RGB signals so it will be sent over all three lines. With the button IN, the RGB signals are switched on and the monochrome signal is off, and

the mono detect is not connected. Wire the output to the DB9 female connector. The Ultrasync comes with a cable which has a DB9 male connector. Also, 68 ohm 1/4 watt resistors must be inserted in lines 6,7, and 10 from the ST (the RGB analog signals) to reduce the intensity. No resistor is required for the monochrome signal. Also, make sure that the signal ground and all shields are connected together. For audio, I connected the Monitor Master with a 10 watt amplifier with a \$10 speaker from Radio Shack. And that's it. Good luck!

If you have any problems just leave me a message and I'll get back to you as soon as possible. Dave Davey 73357,645

Computer Show

ATARI TREK88 COMPUTER SHOW TO BE HELD IN SEATTLE MAY 14TH TO 15TH 1988.

by CD Martin

May 14-15 1988 Atari users groups of the greater Pacific Northwest are proud to bring you the second annual ATARI TREK COMPUTER SHOW. TREK88 will be held, once again, in the spacious Seattle Center Flag Pavilion, 9am to 5pm May 14th and 15th, 1988.

Since last years show was so successful, fee will continue to be \$3 and children under 12 free. Fee entitles you to a chance of winning one of dozens of prize drawings held through out the show. There will be exciting exhibits and dazzling displays by vendors from across the country. Speakers will discuss the many aspects of Atari computers and their contributions and affects on society. Ofcourse, one of the nations most devoted Atari users, Pacific Northwest Atari users groups, will be there to show you how we love our Ataris. For other information and available vendor participation for K88, contact: Dave Hanthorn (206)232-3009.

MAC Report

by David Small

Magic Sac version 5.9

Addendum

New features:

1. ICD and Atari SH205 hard disks now work.
2. Color mode now works in the multi-megabyte sizes.
3. A disk status display we refer to as "Orwell's Monitor" was added to 5.9. It only works in monochrome (crashes in color). To activate it, press SHIFT-UP ARROW; to de-activate, SHIFT-DOWN ARROW.
4. A floppy disk cache was added to all the memory sizes except 832K. A cache is like a "smart" ram disk, as things are read from the disk they are also placed in the cache. The next time that data is needed it is read from the copy in the cache in memory instead of from the actual disk. This makes all the floppy disk i/o much faster.
5. We now support HFS. This is the newer DOS that Apple introduced for double sided floppy disks and hard drives. It has true folders

(unlike MFS) and has much better performance on larger, larger than 4 meg, hard disk partitions. It also doesn't limit you to 400 files per hard disk partition. If you don't have a hard disk or a Translator there is no reason to use HFS.

MFS and HFS: A Story.

When the Mac first came out in 1984, it used single sided disks. The people at Apple came up with a "filing system", or "disk operating system", called MFS. (MFS is short for, "Macintosh Filing System".) MFS worked just fine for floppy disks with a small amount of storage on them. MFS was built into the "64K" Macintosh ROMS. And so things stayed for awhile.

Then the Mac started growing up. It began to use double sided disks and even hard disks. And a sad truth was discovered: the old filing system, MFS, just didn't make it for these bigger disks. It was way too slow and cumbersome.

So Apple came up with a new filing system, called HFS. HFS is short for "Heirarchical Filing System". HFS did the trick; it made double sided and hard disks work acceptably quickly.

Apple built support for HFS into the new "128K" ROMS. They came up with a more - or -less standard: the Mac always used MFS for single sided disks, and always used HFS for double sided and hard disks. They've stuck with HFS ever since.

Now, for owners with the 64K ROMs that wanted HFS, Apple came out with a file called "Hard Disk 20". "Hard Disk 20" was for the Apple Hard Disk 20, a 20-megabyte hard disk that plugged into the back of the Mac. The file "Hard Disk 20" was basically a disk version of HFS; it made a 64K ROM Mac, which would normally run MFS, able to run HFS as well.

As of 1987, the Apple standard is still this: MFS on single sided floppy disks (400K floppies), and HFS for double sided floppies and hard disks. That's right; if you put a double sided disk into a 64K (older) Mac, it won't work.

HFS is downwards compatible. This means, if you're running an HFS Mac, then you can read old MFS single sided floppies with no trouble. But the reverse is not true; you can't read new double sided Mac disks on an old MFS Mac.

During all this, Apple was shipping various Systems and Finders, which some people think has something to do with MFS/HFS. They're really not that related. For instance, just because you're running (say) Finder 5.4 doesn't mean you're running HFS. Honest; we run all the Finders under MFS with no trouble.

If you're going to run HFS, you're going to want Finder 5.3 or later (5.4 works better than 5.3, in our experience). Apple added some goodies to 5.3 and later and that made HFS work if it was running.

The Magic Sac: MFS/HFS.

We've always used MFS, for everything. For instance, our single and double sided Magic formats were all MFS, and our hard disk formatter makes you an MFS hard disk.

We've had no trouble with floppies, and hard disks only get unwieldy when they pass around 100 files on a given partition. (See the Magic Sac manual for more on this). At this point, the hard disk slows down anytime you go to the "desktop", or Finder; you'll see a visible delay. You need to particularly notice that Apple uses HFS for double sided formats, and we use MFS. This means if you directly "clone" an Apple double sided disk to a Magic double sided disk, there will be problems with the filing system. (This is why we haven't supported double sided transfers via the serial cable. Think about it.)

The newest (Version 5.0 and above) hard disk formatters also give you an MFS/HFS button; you pick between MFS and HFS at format time. (I bet you could have figured that out). The version 4.52 hard disk formatter only allowed MFS.

How to Start Up An HFS-Capable system

Okay, you say, I need to work with double sided Mac disks, or I want HFS for my harddisk so I can use more than 100 files at acceptable speed, or maybe even both. How do I get HFS running?

First, you need "Hard Disk 20", from Apple. This is the guts of a disk-based HFS for a 64K ROM machine (which is basically what the Magic Sac is). The Hard Disk 20 you want is "Version 1.1" (not version 1.0 or 1.1a, which have problems); it's dated May 1986. Look in the "Get Info" window to see if you have the proper "Hard Disk 20".

Next, you need a plain, bootable System & Finder disk. The Finder must be version 5.3 or bigger, and the System must be version 3.2 or bigger. In fact, we'll go ahead and recommend Finder 5.3 / System 3.2 to you, since it looks like the brand new Finders act weirdly with HardDisk 20, and we know 5.3/3.2 works fine. Again, you should always keep the System and Finder matched together, the same way they came on the Apple disk, to avoid weird compatability problems.

Now, put the "Hard Disk 20" file into the System Folder, which already has the System and Finder files on. Next, if you have a hard disk, put this System Folder, with Hard Disk 20 and Finder 5.3/System 3.2, on the first partition. Sorry, folks, Finder 4.1/System 2.0 or almost any other Finder/System will just bomb you out. Finally, start up the Magic Sac using this new startup disk.

Now, if you've done everything right, when you see the "Welcome to Macintosh" page, you'll also see something new: "Hard Disk 20 Installed". This means your Magic Sac is now HFS capable. Now at this point, what happens depends on if you have a hard disk or not.

Hard Disk 20 (HFS) Startup from floppy; no hard disk.

1. System starts up; "Hard Disk 20 Installed" is displayed after "Welcome to Macintosh".
2. The System and Finder off the floppy disk are used; you're taken to the "desktop" (Finder).
3. You're HFS capable; double sided Mac disks work okay.

Hard Disk 20 (HFS) Startup from hard disk; in other words, you selected "Boot from HD" on the Magic Startup page.

You'd better have Finder 5.3 / System 3.2 / Hard Disk 20 on your hard disk's first partition and Finder 5.3 (or 5.4) / System 3.2 on the second partitions, and you'd better have at least two partitions.

1. System starts up; "Hard Disk 20 Installed" is displayed after "Welcome to Macintosh". "Hard Disk 20" is read from the first partition of the hard disk.
2. The first partition of the hard disk is "ejected". Since hard disk ejects are ignored, this pretty much does nothing except get rid of that disk's icon.
3. The System and Finder off the second partition of the hard disk are loaded; you're taken to the "desktop" (Finder). There won't be a disk icon for the first partition; you'll have to press Shift-F3 if you want to use it.
4. You're now HFS capable; double sided HFS disks and HFS formatted hard disks work okay.

There are, of course, several things that can go wrong in this whole procedure. The first is you don't use a Finder 5.3 or above. Finder 4.1 in particular doesn't work right with Hard Disk 20. The second is if you mix Systems and Finders. For instance, you might use the System 2.0 from a Finder 4.1 disk with a new Finder 5.3. This won't work well at all, either; you must keep Systems and Finders together. The best way to solve this is to keep your System and Finder in a "System Folder", and always drag the folder around to disks you want to update; this ensures all files are updated at the same time. The third comes when using a hard disk. If you mix up Systems and Finders there, you've got problems as well. For instance, if your startup floppy is (quite properly) a Finder 5.3/System 3.2 disk, but the System and Finder on your hard disk is different, you'll have problems. The lesson here is update all your hard disk partitions with the new System and Finder you'll be using. The easy way to do this is to make one System Folder with all the right things on it, and copy it onto each hard disk partition.

The fourth comes if you try to boot up with the hard disk, and if your first and second partitions don't have the same Systems and Finders on them. Remember, the system will use a little bit of your first partition, eject it, then finish starting up off the second partition. You have to accomodate it.

Of course, if you're planning on using HFS a lot, you may want to set up your hard disk with this in mind, with a small, (say) one megabyte "boot" partition containing only the System Folder, then the second partition containing all the files you'd like to use plus another copy of the System Folder.

We're fully aware that this isn't a lot of fun to do. Please bear in mind we didn't write Hard Disk 20, or we'd have done things differently, okay?

Recommended Disk Setups

Since almost no other combinations of System and Finder and Hard Disk 20 work than our recommendations, you're going to find out really fast why they're our recommendations.

1. Floppy Only.

Put a Finder 5.3/System 3.2/Hard Disk 20 in a System Folder on a startup disk, and put it in your drive A: Try to update your other disks with this same System Folder if you want to start up using them. If you do something like the following, you're going to change Finder versions on the fly, and might have trouble:

Disks:

in drive A, Finder 5.3/System 3.2/Hard Disk 20
in drive B, Finder 4.1/System 2.0 and any Application

1. You start up off drive A.
2. You put in disk B.
3. You double-click on B's program (MacPaint).
4. You doddle awhile, then exit MacPaint.

At this point, the Mac operating system cleverly switches Finders to the Finder on the disk you were just using, e.g., drive B. Suddenly you are running Finder 4.1, and HFS isn't working for you.

If you want to get back to HFS, try this miracle fix: hold down CONTROL and ALTERNATE, and double click on drive A's Finder (the Finder 5.3). This will launch you back into Finder 5.3, which is HFS compatible.

See why we recommend you update your disks? If you mix Systems and Finders, you'll always be running into this nonsense.

Finally, note that if you install RAMSTART, our recommended (and free) Ramdisk, then you'll always be treated to the System and Finder you began with; RAMSTART "locks" those into the operating system. This is most handy. If you've got a megabyte or more of RAM, be certain to check out RAMSTART.

2. Hard disk startup (boot and run off hard disk).

This can be tricky, because the Mac thinks our hard disks are just big, fast floppies. It does just like it would do with option two: it ejects the "boot" drive, e.g., the first hard disk partition. Then it continues to start up off the second partition it finds. If you haven't got two, you crash. Look, I didn't write it.

It's up to you, but I'd recommend placing a small partition on your hard disk before your normal sized partition(s). This is a "boot" partition, meant to be ejected. (You can always get at it, if need be, with SHIFT-F3. See your Magic Sac manual).

Your "Boot" partition must be MFS; remember, when it's read in, the computer has no idea what HFS is. That must come in off the disk drive first!

Something like this would be fine:

Drive C: (GEM)

Drive D: (GEM)

Drive E: 1 megabyte, Magic Sac, MFS format ("boot" partition)

System Folder w/ Finder 5.3/System 3.2/Hard Disk 20

Drive F, 10 Megabytes, Magic Sac, HFS format (normally used partition)

System Folder w/ Finder 5.3/System 3.2

or

System Folder w/ Finder 5.4/System 3.2

To set up HFS on your hard disk, try this:

1. Use MagicHD to create two Magic partitions, one 1 megabyte (pretty small) MFS partition, one however sized (up to 16mb) HFS partition.
2. Create two floppies. One ("A") has Finder 5.3/System 3.2 on it. The other ("B") has Finder 5.3/System 3.2/Hard Disk 20 1.1 on it.
3. Run lmagic5, enable the hard disk, don't enable boot from HD. Use Disk A as a startup disk.
4. After booting, press shift-F3 to access the MFS (first) partition. You should get the "Empty Hard Disk" icon.
5. Get disk B into the system.. Copy "Hard Disk 20" from B to the MFS partition. We can't just boot with disk "B" because of the way Hard Disk 20 works; if you try to boot a floppy with Hard Disk 20 on it with the hard disk enabled, it will try to use data on the hard disk that's not there yet. In particular, the Finder/System/HD-20 needs to be on the hard disk.
6. Eject hard disk partition, restart system.

Okay, we've got the MFS partition all set up. Now we need to get Finder/System/HD-20 onto the HFS partition. We'll have to get HFS running to do that, so:

7. Run lmagic5, enable HD but not boot, this time boot with disk "B". You'll get the "Hard Disk 20 Installed" message". You'll get a little farther, then be asked to eject the A: floppy drive. Do so. This is a "feature" of HD-20; it automagically ejects the floppy boot disk on startup. You've now got the MFS icon onscreen; press shift-F4 to get the HFS disk icon. Hooray, we're now accessing the HFS hard disk.
8. Copy Finder/System/Hard Disk 20 from the MFS partition to the HFS partition. Eject both HD partitions, then restart.
9. Your system is now FINALLY set up to boot from the hard disk. So, run lmagic5, enable BOTH hard disk and hard disk boot. What you'll see is the "Hard Disk 20 Installed" message, then an "invisible" eject where the MFS partition is ejected, then the startup will continue into the HFS area. This is why we made the MFS partition so tiny; we don't really use much of it, just enough to sort of bootstrap up with.

It is doubly or triply crucial that you not crash under HFS, nor forget to Eject the HFS hard disk before shutting down. HFS is real twitchy about these things, and I've lost data many a time on crashes, even on real Macs. Be careful; don't run new, unknown applications with your HFS hard disk. After all, it's your data.

You may notice Finder 5.3 refuses to eject disks. We don't know why either. To eject a disk under Finder 5.3, just drag the disk icon to the trash can -- don't worry about that "throwing away all your data". It's just another way to do an eject. Most Magic Sac users seem to have gone to Finder 5.4 because Eject works properly on it. If you want to do this, put Finder 5.4 on the HFS hard disk partition ONLY -- not on the MFS disk. Hard Disk 20 wants Finder 5.3 out there on the MFS partition.

Other Systems/ Finders

Here's what we definitely know.

1. System 2.0 and below fizzle with Hard Disk 20; they do not work. Weird crashes will greet you if you try. You're welcome to try.
2. Finder 4.1 and below fizzle with Hard Disk 20. See above comments.
3. Finder 5.4/System 4.0 and Finder 5.5/System 4.1 don't seem very stable with Hard Disk 20. This is due to changes in the System file. Part of the System file is used to fix bugs in the Mac ROMs. The bug fixes for the 64K ROMs were removed from the System file starting with version 4.0. THIS MEANS YOU WILL BE RUNNING WITH KNOWN BUGS IF YOU RUN FINDER 5.5 / SYSTEM 4.1 or FINDER 6.0 / SYSTEM 4.2 OKAY?
4. Finder 5.4 /System 3.2 works okay on a hard disk system if you put it in the "continuing boot" partition (second partition on a hard disk boot system). I use that myself at the moment, since I like the features of Finder 5.4 over those of Finder 5.3.

** Known Problems as of 3/88 **

Running with Finder 5.5 / System 4.1 *may* cause hard disk damage. We have had reports of this. They are not verified.

USING FILE NAMES BIGGER THAN 21 CHARACTERS CAUSES PROBLEMS IN THE CURRENT RELEASE. DON'T DO IT -- YOU CAN DAMAGE YOUR DIRECTORY THAT WAY, which means, kiss your hard disk's data goodbye.

Apparently, there's some problem in the subtle workings of HFS (if you're interested, it's a B-* Tree structured directory), and over 21 characters causes trouble. You will see this if copy files with long names into an HFS disk (either floppy or hard), try to save a long file, or try to rename a file with a long name.

I managed to lose 15 megabytes of data this way, so be careful; try not to do this until we get it fixed, okay? We've locked our busy little elves in the dungeon to find this one.

I hope this little section ripped out of our Translator manual helps you set up and get rolling with HFS. -- Thanks, Dave